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# **FAMINE EARLY WARNING SYSTEMS NETWORK TECHNOLOGY SUPPORT CONTRACT (FEWS NET TSC)**

**MARKET DATA VISUALIZATION:  
PROOF OF CONCEPT**

**AUGUST 15, 2012**

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**DATA MARKETING VISUALIZATION:  
PROOF OF CONCEPT**

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## **DISCLAIMER**

The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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## Overview

FEWSNET Market Data analysts create a regular report call the *Price Watch Annex*. This report shows the percent change in commodity prices in a specified market over a specified time period. The *Price Watch Annex* is presented in a tabular format that uses colored arrows to show the direction of the changes. While this temporal reporting is useful, the market data analysts would like to geographically represent the data to better see patterns of movement.

This document provides a high-level specification for the display of FEWNETS country market price data using both spatial and temporal methods of visualization.

## Current Reporting Methodology

The current *Price Watch Annex* details by country, by market, and by commodity the percent change in prices over a specified time period. The report is presented in a tabular format that uses colored arrows to show the direction of changes over a specified time period.

See below example:

Figure 1. Major Food Commodities from *Price Watch Annex*

Major Food Commodities						
Major markets	Current price/kg US\$ price	Percentage change			Change over 1 month, over 1 year, and over 2 years (→)	
		Over 1 month	Over 1 year	Over 2 years		
<b>Cotonou</b> Benin	Maize					
	XOF 220	-2	-20	-2	▶	▼
	\$0.43				▶	
	Rice					
	XOF 530	0	0	0	▶	▶
<b>Bohicon</b> Benin	\$1.03				▶	
	Cowpea					
	XOF 760	3	17	39	▶	▲
	\$1.48					▲
	Maize					
<b>Bohicon</b> Benin	XOF 175	-8	-15	9	▼	▼
	\$0.34					▲
	Rice					
	XOF 480	0	13	-9	▶	▲
	\$0.94					▼

The directionality and color of the arrows are defined as follows:

**Table 1. Legend for Interpreting the Directionality and Colors in Figure 1.**

<b>Red Arrow</b>	Greater than five percent increase in prices over the time period (> 5% increase in prices)
<b>Blue Arrow</b>	Between a five percent increase and a 5 percent decrease in prices over the period (+5 % < % change in prices < -5 %)
<b>Green Arrow</b>	Greater than a five percent decrease in prices over the time period. (> 5% decrease in prices)

## Proposed Display

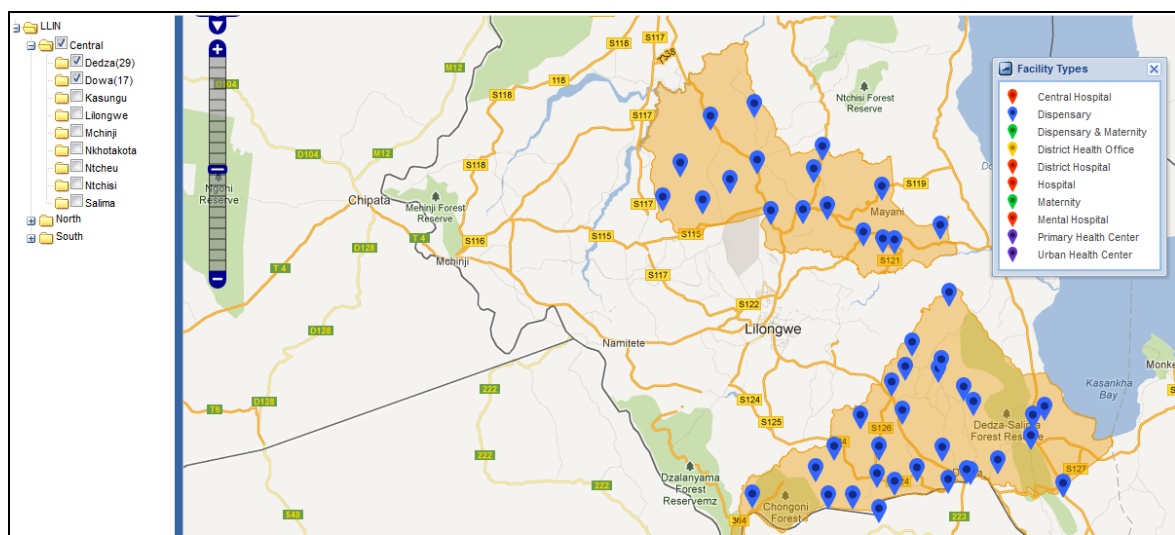
The FEWSNET price analysts would like to query and display the price data geographically, so that they can look at the patterns in price movements over time and over space.

From a display perspective, the system would look very similar to Ki-supplies, with the following differences:

**Table 2. Comparison of Ki-Supplies and the New System**

Object	Ki-Supplies	New System
Left-hand Navigator	By Product/by Admin Unit	By Country /Admin Unit ( <u>Note</u> : if we add in the other required features, this display would likely have to change, but will work for the proof of concept.)
Points	Facility type	Market
Color of point	Facility Type	% change in market month-over-month

**Figure 2. Screenshot of the New System.**



## System Functionality

While the display is similar to what we have in Ki-supplies, there is additional functionality that we would need to build in to make it more flexible. Below is a quick list of initial ideas that come to mind.

- Ability for the user to select from a list the commodity she wants to display
- Ability for the user to select from a drop-down the parameters that would determine the scenario the color of the dots represent. For instance, in the *Price Watch Annex*, they display the percent change in prices month-over-month, year-over-year, and over two years. The user should be able to choose which parameter he/she wants to display.

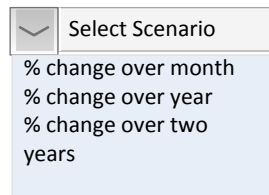


Figure 3. Example of the Needed Drop-Down Selection of Parameters

- Ability to look at regional maps – FEWSNET analysts often look at regional price changes.
- The ability to print the created map, with a legend in a format that can be added to reports. We are working on this for population explorer, but it is not yet ready.
- Ability to dump the data from the map into a spreadsheet (e.g. Country, market, commodity, price time one, price time two, percent change).
- The ability for an admin to ultimately add new scenarios to the drop-down for visualization. For example, looking at volatility rather just percent change.

**Note:** *this complexity would be a stage two feature.*

## Next Steps

- **Complete a proof-of-concept using the existing functionality in Ki-Supplies.** Show a map of Mali with the markets displayed in different colors for a single commodity (e.g. millet, maize, or sorghum) based on the month-over-month change in prices from May to June 2012. We have the shape files and price data available to do this.
- If FEWSNET likes the idea, develop a more detailed specification for the system – *This is likely to be a visualization feature of the new price database that is currently being defined – TBD*